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## RESEARCH ARTICLE

# Risk Factors of Attenuated Psychosis Syndrome in African American Young Adults: Ethnic Identity and Adverse Childhood Experiences

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### Abstract

A variety of mental health problems in adulthood are related to adverse childhood experiences (ACEs). By age 16, two-thirds of children in the African American community report experiencing at least one traumatic event. The research field of ACEs is relatively young and current research accounts for less than half of ACE exposure types and their individual role in the development of mental illnesses like psychosis. Even fewer bodies of research explore cultural factors between ACEs and attenuated/subclinical psychotic symptoms. The purpose of this research was to explore how ethnic identity amongst African American young adults impacted the presentation and severity of subclinical psychotic symptoms, by way of ACE exposure. A convenience sample of 304 African American college students participated in this study. The results revealed that materialism and individualism subscales of Cultural Misorientation (CM), a measure of ethnic identity, mediated the relationship between adverse childhood experiences and subclinical psychotic symptoms in women. No association was found in men. The results suggest that clinicians and campus counselors should be aware of social cultural factors contributing to mental attenuate/subclinical psychotic symptoms.

### Keywords

Risk factors, Attenuated psychosis syndrome, African American, Childhood adverse experiences, Ethnic identity

a serious mental illness such as bipolar disorder, major depressive disorder, or schizophrenia. Schizophrenia spectrum diagnosis is more commonly assigned to African Americans. Failing to understand and appropriately manage cultural differences will have significant mental health consequences for varied racial/ethnic groups [2]. The purpose of the present study was to examine risk factors of attenuated psychosis syndrome in a sample of African American young adults, specifically to investigate whether a lack of ethnic identity and the presence of adverse childhood experiences (ACEs) put an individual at a higher risk of developing attenuated psychotic symptoms.

Codifying attenuated psychosis syndrome (APS) denotes the groundbreaking peak of a quarter century of research on early psychosis. The proposed diagnostic criteria for APS in DSM-5 (American Psychiatric Association [3]) are as follows: (1) At least one of the following symptoms is present in attenuated form, with relatively intact reality testing and is of sufficient severity or frequency to warrant clinical attention: Delusions, hallucinations, disorganized speech; (2) Symptom(s) must have been present at least once per week in the last 1 month; (3) Symptom(s) must have begun or worsened in the past year; (4) Symptom(s) is sufficiently distressing and disabling to the individual to warrant clinical attention. Symptom(s) is not better explained by another mental disorder, including depressive or bipolar disorder with

## Introduction

National Alliance of Mental Illness [1] found that one in 17 adults, roughly about 13.6 million, live with



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psychotic features, and is not attributable to physiological effects of a substance or another medical condition; and (5) Criteria for any psychotic disorder have never been met (DSM-5, 2013) [3].

Individuals who fit the above-mentioned criteria for APS are more likely to develop psychosis and schizophrenia, says William Carpenter, chairman of the task force on schizophrenia spectrum disorders for DSM-5. Therefore, intervening during and even prior to the pre-psychotic period could restructure and even halt this serious mental illness in a large number of people [4].

Adverse childhood experiences are pervasive among youth and young adults in America, especially among those from diverse cultural backgrounds [5] and they are associated with multiple mental health problems in adulthood, including schizophrenia and attenuated psychosis syndrome [6,7]. Neurodevelopmental effects of trauma on children's brain has been reported, particularly damage to the stress regulation mechanisms in the hypothalamic pituitary adrenal (HPA) axis [8]. These alterations have been suggested to contribute to a vulnerability to psychopathology under stressful circumstances [9]. High stress sensitivity has been consistently linked to the emergence of positive psychotic symptoms in particular [10-12], therefore possibly accounting for the relationship between trauma and psychosis. Bebbington and colleagues [13] found that early victimization experiences contribute to the vulnerability to psychosis. Shevlin and colleagues [14] examined trauma (physical and sexual abuse, and neglect) and psychosis from the National Comorbidity Survey (NCS) Part 2 data. They found that the effects of neglect and sexual abuse, along with physical abuse similarly put a child at risk for psychosis. The first meta-analysis (including 41 studies with 2048 psychotic participants) revealed that people who had suffered childhood adversity were 2.8 times more likely to develop psychosis than those who had not [15].

Velthorst, et al. [7] explored trauma history and the association with baseline symptoms in a cohort of individuals at Ultra High Risk (UHR) of developing a psychotic disorder. Results revealed significant associations between a history of particular types of trauma and attenuated psychosis symptoms. A history of physical abuse and 'other trauma' (e.g. witness of shooting, domestic violence, death of close relative/friend) during childhood correlated significantly with higher intensity of perceptual abnormalities, such as suspiciousness, visual disturbances, grandiose beliefs and low mood, compared to those persons without a trauma history. A history of sexual abuse is also related to perceptual abnormalities; however, these participants' perceptual disturbances included abusive content and PTSD symptoms.

Studies have also begun to look at gender differences in schizophrenia by way of ACEs. The incidence of

schizophrenia has been found to be higher in men who have been exposed to ACEs than women who had similar experiences [16-18]. Victimization experiences are found to be linked to psychosis differentially for female and male participants, with the odds ratios correlated with rape being significantly higher for male participants [14].

Some African Americans at the conscious level have become alienated from their natural African orientation through their internalization of the European worldview [19]. Their behaviors may reflect a rejection of their natural African dispositions. The African worldview can indicate psychological communal, spiritual, collective survival thrust as opposed to the European worldview of individualism and materialism. Cultural Misorientation (CM) is said to represent that foreign psychological or psychopathological disposition in the African personality, which allows African Americans, as a result of their contemporary circumstances, to unknowingly value and participate in European cultural indoctrination through the practice of European cultural values, rituals, and customs. Kambon [20] employs the psychological construct of CM to define and explain the intense, pervasive, and sustained contradictory psychological functioning and behaviors among African Americans reflecting an antithetical cultural orientation, which is operating from a foreign worldview framework. CM, or lack of African ethnic identity, can be a risk factor of mental illness, including APS.

The purpose of this study was to explore the roles that CM play on the overall presentation of attenuated psychotic symptoms, by way of ACE exposure.

## Methods

### Participants

This research used a correlational research design. Participants included a convenience sample of 304 African American college students, 199 (65.46%) women and 105 (34.54%) men from a Historically Black College and University in the southeastern region of the United States. Participants were at least 18 years of age and fairly balanced in major. [Table 1](#) displays participant demographic information. Majority of participants experienced an ACE (83.2%) compared to those who did not identify a history of ACEs (16.8%); 68.1% of participants experienced more than one ACE.

### Instruments

*Demographic, Developmental, and Family History* included information on age, gender, education, GPA, marital status, employment, living arrangements, brain injury, parental Social Economic Status and education level. Questions regarding previous psychiatric contacts and hospitalizations, family history, and medical conditions were also probed.

*Adverse Childhood Experiences Scale* the ACE scale is

**Table 1:** Demographic Characteristics by Gender (Mean  $\pm$  SD or N (%)).

	Male (n = 90)	Female (n = 185)
Age (years)	22.56 (4.6)	21.98 (3.9)
Place where primarily grew up		
Urban was in the majority	51 (56.7)	69 (37.3)
Urban was in the minority	10 (11.1)	22 (11.9)
Rural was in the majority	10 (11.1)	22 (11.9)
Rural was in the minority	5 (5.6)	20 (10.8)
Suburban was in the majority	4 (4.4)	20 (10.8)
Suburban was in the minority	10 (11.1)	31 (17.3)
Religion		
Christianity	80 (88.9)	169 (91.4)
Catholicism	1 (1.1)	0
Islam	1 (1.1)	2 (1.1)
Ancestor worship	3 (3.3)	5 (2.7)
Not applicable (N/A)	3 (3.3)	5 (2.7)
Other	2 (2.2)	4 (2.2)
Mental health condition		
Anxiety	3 (3.3)	22 (11.9)
Depression	4 (4.4)	7 (3.8)
Eating disorder	2 (2.2)	0
Trauma related disorder	1 (1.1)	0
Attention deficit disorder	1 (1.1)	2 (1.1)
Traumatic brain injury	0	2 (1.1)
No mental/behavioral condition	79 (87.8)	152 (82.2)

a 10-item inventory that retrospectively measures cumulative experiences of childhood trauma. The ACE scale is intended to measure the association of multiple types of abuse with different types of health outcomes [21]. Total sums range between 0 and 10. The scale does not take into account the frequency of each type of abuse but rather a cumulative account of the types of ACE experienced. ACE has appropriate internal consistency (Cronbach's alpha of 0.814, Larkin, n.d.). The participant alpha of ACE-10 for the current study was 0.916.

*Prodromal Questionnaire- Brief Version PQ-BV*; [22] PQ-BV is a 16-item instrument that measures the risk for psychosis among clinical and nonclinical samples. The instrument measures the presence of negative symptoms, perceptual abnormalities such as hallucinations, and unusual thought content like delusional ideas and paranoia. Both a dichotomous and 4-point Likert scale is used to identify the risk for psychosis or subclinical psychotic symptoms, as the respondent must first respond "true" or "false". The respondent proceeds using the 4-point Likert scale only if their initial response is "true". The Cronbach's alpha of the PQ-16 is 0.80, endorsing 6 or more symptoms specify a high true positive rate (87%) and high specificity (87%; [23]). The participant alpha/internal consistency of PQ-16 for the present study was 0.896.

*DSM-5 Level 1 Cross-Cutting Symptom Measure-Adult*. The 23-item instrument assesses mental health domains across 13 psychiatric domains deemed important across psychiatric diagnoses (American Psychiatric Association) [3]. Each item inquires about how much (or how often) the individual has been bothered by the

specific symptom during the past 2 weeks. Only results yielded from the psychosis domain was used for analysis. A 5-point likert scale is utilized to rate the items from 0 = none/not at all to 4 = severe/nearly every day. The participant alpha/internal consistency of DSM-23 for the current study was 0.883 and 0.591 for the DSM psychosis domain.

*Cultural Misorientation-Short Form (CM-SF)* [24] the CM-SF is a 30-item personality assessment instrument designed to assess the condition of cultural misorientation across 6 subscales. The six subscales are: Materialism orientation, individualism orientation, alien-self orientation, anti-self-orientation, self-destructive orientation, and integration orientation. A 5-point likert scale is utilized to assess CM-SF total and six-sub scores with responses ranging from 1 = Strongly Disagree to 5 = Strongly Agree. CM-SF scores can range from 30 to 150 points. Minimal CM-SF score ranges from 30-50 points; this score range reflects the weakest Eurocentric orientation and behavioral expression. Moderate CM-SF score ranges from 50.1-100 points reflecting orientation and behaviors to a much greater degree than Minimal CM-SF but to a lesser degree than Severe CM-SF. Severe CM-SF score ranges from 100.1-150 points and reflects the Eurocentric orientation and behavioral expression to the greatest degree. Cronbach's Alpha coefficients range in the 0.80 s for the total CMS and from 0.50 to the upper 0.70 s for the six subscales [24,25]. The participant alpha/internal consistency of CM-SF-30 for the current study is 0.736. Cronbach's alphas for the subscales are 0.571 (materialism orientation), 0.488 (individualism orientation), 0.125 (alien-self orientation),

**Table 2:** Correlation between Adverse Childhood Experiences and Attenuated Psychotic Symptoms in Females.

Variables	ACE Total	PBQ Total	PBQ Severity	DSM Psychosis Total
ACE Total				
PBQ Total	-0.154*			
PBQ Severity	-0.146*	0.914**		
DSM-P Total	0.018	0.260**	0.268**	

\*Correlation is significant at the 0.05 level (2-tailed), N = 199; \*\*Correlation is significant at the 0.01 level (2-tailed), N = 199.

0.370 (anti-self-orientation), 0.514 (self-destructive orientation) and 0.503 (integration orientation).

## Procedures

Upon obtaining IRB approval from the university and permission of the professors, students were invited to participate in this study. After obtaining informed consent, students were administered the questionnaires in one setting, which took about 35 minutes. The first author thoroughly debriefed participants after they completed the questionnaires and reiterated the importance of confidentiality issues in the study.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 20 and Statistical Analysis System (SAS). A set of Pearson correlation analysis was run to explore the relationships between adverse childhood experiences scores, CM scores and attenuated psychosis syndrome scores. A structural equation model (SEM) was used to analyze the mediating effect that CM has, if any, on the relationship between adverse childhood experiences and APS. This multivariate statistical technique estimated the multiple and interrelated dependence in a single analysis and the degree to which each variable account for one's susceptibility to attenuated psychotic symptoms.

## Results

The study was conducted to evaluate risk factors of attenuated psychosis syndrome in African American young adults. With respect to the relationship between ACE exposure and attenuated psychosis syndrome, the Pearson correlation analysis revealed no significant relationship ( $r = -0.073$ ,  $p = 0.206$ ) between ACE exposure and APS total scores. That is, participants who reported adverse childhood experiences were not likely to endorse more attenuated psychotic symptoms. The relationship between ACE exposure types and attenuated psychosis syndrome total scores were not significant either [abuse (PBQ  $r = -0.108$ ,  $p = 0.061$ ; DSM psychosis  $r = -0.032$ ,  $p = 0.582$ ), household dysfunction (PBQ  $r = -0.050$ ,  $p = 0.382$ ; DSM psychosis  $r = 0.029$ ,  $p = 0.617$ ), and neglect (PBQ  $r = -0.045$ ,  $p = 0.433$ ; DSM psychosis  $r = 0.003$ ,  $p = 0.965$ )]. However, an unexpected negative significant relationship between childhood abuse exposures and symptom severity was observed ( $r = -0.126^*$ ,  $p = 0.028$ ), indicating that participants who reported more instances of childhood abuse tended to report less symptom severity. Furthermore, there were no significant relationships between ACE exposure types and DSM psychosis subscale scores.

## Correlation analysis between ACE and APS by gender

The bivariate Pearson correlational analysis showed significant negative correlation between ACE and the number of attenuated psychotic symptoms endorsed in female participants for PBQ total scores, but not for DSM psychosis total scores, as seen in Table 2. Unexpectedly in a similar trend, the ACE scores and the severity of attenuated psychotic symptoms were significantly negatively correlated. Results indicated that as one experienced more adverse experiences she reported less symptom severity. With regard to ACE exposure types and their individual role in the development of psychosis, only childhood abuse exposures were significantly related to APS total scores ( $r = -0.195^{**}$ ,  $p = 0.006$ ) and severity scores ( $r = -0.193^{**}$ ,  $p = 0.006$ ). Neither household dysfunction nor neglect were significantly related to APS total and severity scores. The Pearson correlation analyses between childhood household dysfunction and APS total and severity scores showed the following results: PQB total scores ( $r = -0.119$ ,  $p = 0.094$ ), DSM psychosis total scores ( $r = 0.028$ ,  $p = 0.691$ ), and PBQ severity ( $r = -0.104$ ,  $p = 0.145$ ). The results reflecting the relationship between childhood neglect and APS total and severity scores were as follows: PQB total scores ( $r = -0.102$ ,  $p = 0.153$ ), DSM psychosis total scores ( $r = 0.014$ ,  $p = 0.847$ ), and PBQ severity scores ( $r = -0.105$ ,  $p = 0.141$ ).

In contrast, there was no evidence of significant relationships among the variables in male participants. Specifically, no significance was found between ACE and psychotic symptoms among men for either the number of attenuated psychotic symptoms endorsed (PBQ  $r = 0.057$ ,  $p = 0.561$ ; DSM psychosis  $r = 0.010$ ,  $p = 0.918$ ) or the severity of the symptoms ( $r = 0.006$ ,  $p = 0.949$ ), and between ACE exposure types and APS total scores [abuse (PBQ  $r = 0.044$ ,  $p = 0.655$ ; DSM psychosis  $r = -0.051$ ,  $p = 0.608$ ), household dysfunction (PBQ  $r = 0.063$ ,  $p = 0.525$ ; DSM psychosis  $r = 0.045$ ,  $p = 0.649$ ), and neglect (PBQ  $r = 0.051$ ,  $p = 0.608$ ; DSM psychosis  $r = 0.016$ ,  $p = 0.871$ )]. Moreover, the Pearson correlation analyses between ACE exposure types and severity of risk for developing psychosis revealed no significant relationships: Abuse ( $r = -0.009$ ,  $p = 0.931$ ), household dysfunction ( $r = 0.017$ ,  $p = 0.860$ ), and neglect ( $r = 0.001$ ,  $p = 0.991$ ).

## Correlation analysis of cultural misorientation and its relationship with attenuated psychosis syndrome

The bivariate correlational analysis of the relation-

**Table 3:** Correlation between Attenuated Psychotic Symptoms and Cultural Misorientation.

Variables	PBQ Total	PBQ Severity	CM Total	DSM-P Total
PBQ Total				
PBQ Severity	0.922**			
CM Total	0.194**	0.171**		
ASC Total	0.059	0.045	-0.155**	
DSM-P Total	0.369**	0.425**	0.146*	0.055

\*Correlation is significant at the 0.05 level (2-tailed), N = 199;  
 \*\*Correlation is significant at the 0.01 level (2-tailed), N = 304.

**Table 4:** Correlation between Attenuated Psychotic Symptoms and Cultural Misorientation Subscales.

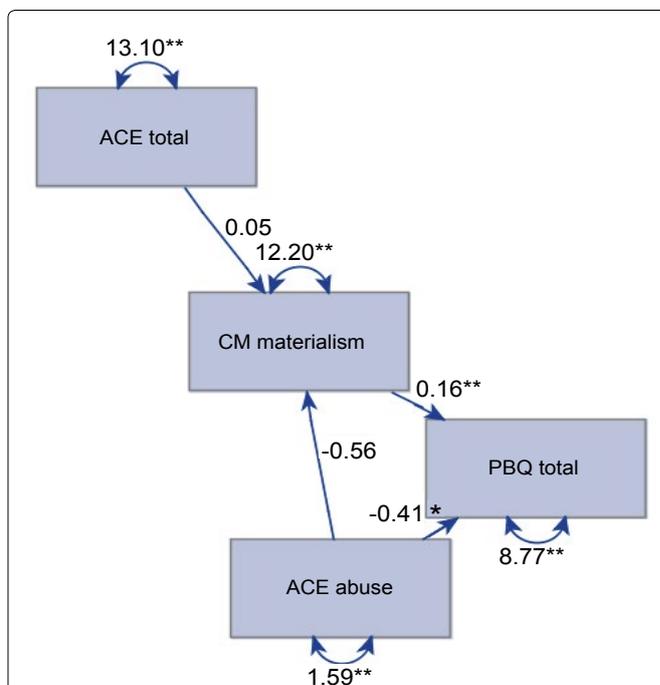
Variables	PBQ Total	PBQ Severity
Materialism Orientation	0.149**	0.116*
Individual Orientation	0.148**	0.118*
Alien-Self Orientation	0.017	0.01
Self-Destructive Orientation	0.227**	0.221**
Anti-Self Orientation	0.106	0.106
Integration Orientation	0.036	0.042

\*Correlation is significant at the 0.05 level (2-tailed), N = 199;  
 \*\*Correlation is significant at the 0.01 level (2-tailed), N = 304.

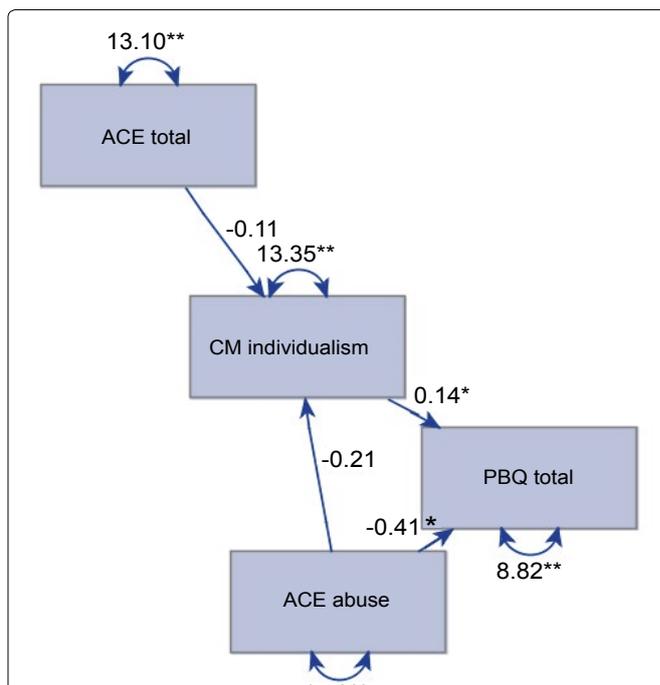
ship between CM and APS produced a set of significant findings. CM was positively correlated to endorsed attenuated psychotic symptoms and the severity of those symptoms (Table 3). Specifically, participants who presented higher levels of CM were more likely to report attenuated psychotic symptoms and their reported symptoms are more severe. The Pearson correlation analyses between CM subscales and APS total scores and severity scores revealed that materialism and individualism orientations were independently related to APS (Table 4). Thus, as one endorsed higher levels of materialism and individualism they reported more psychotic symptoms and the symptoms they experienced were more severe.

**Structural equation model analysis between childhood abuse, CM, and attenuated psychosis syndrome: Mediating effect**

The multiple regression analysis with SEM was used to examine the mediating effects of CM between childhood abuse and APS. CM total scores did not mediate the relationship between childhood abuse and APS, however, CM materialism and individualism subscales mediated the relationship between childhood abuse and APS, as seen in Figure 1 and Figure 2. Adding the subscales to the model increased the fit of the model significantly (-0.19 to -0.41), suggesting that physical-material objectification (materialism) and an I/Me emphasis in life (individualism) increased the childhood abuse-attenuated psychosis syndrome relationship. Thus, the likelihood of endorsing attenuated psychotic symptoms is higher in those individuals who presented materialistic and individualistic cultural misorientation. Analyses only included female participants as no association was found between ACE and psychotic symptoms among men.



**Figure 1:** CM Materialism mediating effect on Childhood Abuse and Attenuated Psychosis Syndrome. Numbers are path coefficients. All path coefficients are statistically significant (P < 0.05). Solid lines represent significant paths. The presented model was based on female participants exposed to childhood abuse.



**Figure 2:** CM Individualism Mediating Effect on Childhood Abuse and Attenuated Psychosis Syndrome. Numbers are path coefficients. All path coefficients are statistically significant (P < 0.05). Solid lines represent significant paths. The presented model was based on female participants exposed to childhood abuse.

**Discussion**

Results support the construct of psychosis proneness by way of childhood abuse for African American young adult females. This is consistent with the results of Fish-

er, et al. [26] study, which reveals a significant relationship between childhood abuse and psychosis. We found an unexpected negative correlation between childhood abuse and attenuated psychosis syndrome. Women who experienced more childhood abuse reported fewer psychotic symptoms while the existing research suggests a positive correlation between the variables [6,14,26,27]. Recent research [4] indicates that university level education is associated with a decreased risk for developing psychotic symptoms in adulthood. Since participants from the present study included African American college students, it is likely that they had overcome child adversity and became more resilient. In addition, their motivation to pursue higher education may have served as a protective factor against mental illnesses such as APS. Another explanation for the non-significant findings is that the study was done on a non-clinical sample with college students and that college students have limited life history and opportunity for some symptoms to unfold. A longitudinal study may prove interesting in examining symptom development (or lack thereof) over time.

Another difference between current results and those of other studies is that although the present study and Fisher, et al.'s [25] study found no compelling evidence that ACE was associated with risk for psychosis in men, several studies indicated otherwise [14,16,28]. The results of the present study might be due to the disproportionate number of males (34.54%) in the sample. Thus, a larger male sample size should be included in future studies.

The significance of considering one's ethnic identity when assessing one's psychosis proneness has received increasing attention in the past decade. Data from the current SEM analysis revealed that ethnic identity could mediate the relationship between childhood abuse and APS. When CM subscales materialism and individualism were included as mediators, the direct effect between childhood abuse and the number of psychotic symptoms endorsed changed into indirect effects of childhood abuse on individualism and materialism, and individualism and materialism on attenuated psychosis syndrome. Thus, the current study showed that CM subscales, materialism and individualism served as risk factors that enhance the relationship between childhood abuse and APS. Previous research shows that experiencing childhood trauma is associated with an increased risk for psychiatric disorders [29,30]. Exposure to childhood trauma (including stressors related with low socioeconomic status) damages brain regions associated with the regulation of stress [31] resulting in increased neurochemical reactivity to stress and maladaptive coping responses to stressors. In other words, African Americans with some aspects of cultural misorientation (individualism and materialism) are at heightened risk of developing psychosis. African ethnic identity is associated with positive mental well-being in Af-

rican Americans [20,32,33]. Apparently, embracing and adopting an identity that is congruent with one's own ethnicity produces more favorable outcomes in people of African descent. Further, adopting a non-congruent ethnic identity produces severely detrimental health outcomes [20,34]. Clearly, African Americans with CM are experiencing cognitive dissonance (internal psychological inconsistency). Whether they actively avoid this contradiction or rationalize it, the cognitive dissonance is detected at the neurological [35], thereby increasing risk for psychopathology.

### **Directions for future research and practical implications**

The current study examined how one's ethnic identity influences psychosis proneness. The present findings indicate that elements of one's ethnic identity, such as cultural misorientation, puts African American youth or young adults at increased risk of severe mental illness, such as viewed by the cultural aspects of individualism and materialism. It is projected that 70 to 80% of the African population in America are said to be affiliated at the moderate to severe levels of cultural misorientation [20]. In other words, the majority of African Americans in America are operating in a manner that can be detrimental to their overall well-being. As a result, future research should further examine how those aspects of culture actually play a role in mediating the relationship between childhood abuse and APS. For instance, Wallace and Constantine [36] found that for both African American women and men, higher degrees of Africentric cultural values were associated with greater perceived stigma about counseling and greater self-concealment. Considering that increased Africentric knowledge is accompanied by increase knowledge of history, it is reasonable to conclude that the knowledge of 1) Intentional human rights violations such as the U.S. Public Health Service Syphilis Study at Tuskegee, 2) Discrimination in health care [37], and 3) Disparities in health outcomes [38] logically creates a level of distrust of health care professions, including the mental health profession. Alternatively, a topic to be explored in further research might be to examine help seeking behaviors as they relate to individualism. Could individualism be one of a "variety of help-seeking behaviors" described that reduces the probability of help seeking in African [39-41]. Additionally, some research has shown that African Americans display more materialistic attitudes when compared to other groups [33]. That is, they are concerned with material comforts or the acquisition of wealth and physical possessions, rather than with spiritual, cultural, or intellectual values. Historically, people of African descent have been disenfranchised and experience discrimination [33], which impacts their educational opportunities, employment and earning potential, living conditions and overall health; One would expect some degree of concern, even preoccupation,

relative to basic material needs. It would be important to identify the sub-group of African Americans for which this is accurate since results indicate if one is overly concerned about possessing material things, it may affect one's well-being.

Accordingly, it is worth exploring the implementation of mental health education programs not only in college settings, but at all educational levels to educate students about their own cultural beliefs and practices and about the consequences of adhering to an antithetical ethnic identity, including individualistic and materialistic orientations. Educating students that while individuality and the desire for material things might be harmless, focusing on them too much can be harmful to one's mental health. This study provides some support that at least some aspects of cultural misorientation can be detrimental to African Americans. It would be important to educate African Americans about what CM is, its negative impact, and what can be done to guard against it [42]. Furthermore, helping to reduce materialistic and individualistic desires that have become detrimental should also be a central focus of implemented mental health programs. Lastly, this study solely consisted of African Americans from a historically black university. Future research should consider including African American participants from various college settings, such as predominately white institutions (PWI's), as one's choice of schooling might affect cultural beliefs and identities.

There are limitations with the current study. First, this study had more female participants than male participants. This might account for the insignificance found amongst male participants, thus, future studies should be inclusive of balanced male and female participants. Second, the PQB was designed to serve as a screening tool of APS and should be used with a diagnostic instrument, such as the Structured Interview of Prodromal Syndromes (SIPS) [43].

In spite of the limitations, this study was the first, to our knowledge, to explore the role that ethnic identity measured by CM plays in the relationship between ACEs and APS. It is also one of the few studies to empirically include a DSM-5 related Cross cutting measure, examining its relationship to other measures. The research findings suggested that the two cultural factors, CM materialism and individualism subscales, mediated the ACE-attenuated psychosis relationship. This study has shown that adverse childhood experiences, though, do not directly increase psychosis risk, are both common and destructive among the African American population. Therefore, we should not only focus on Cultural Misorientation as a risk factor, but also childhood adverse life experiences, of APS among African American young adults. More studies are needed to explore different risk factors of mental illness in general and APS in particular.

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## Ethical Statement

We followed our Institutional Review Board ethical guidelines in conducting this study.

## References

1. National Alliance on Mental Health (2013) Numbers of Americans affected by mental illness.
2. Betancourt JR, Green AR, Carrillo JE (2002) Cultural competence in health care: Emerging frameworks and practical approaches. Retrieved from Commonwealth Fund, Quality of Care for Underserved Populations.
3. American Psychiatric Association (2013) Diagnostic and statistical manual of mental disorders, fifth edition (DSM-5®). Washington, American Psychiatric Publishing, DC.
4. Reddy MS (2014) Attenuated psychosis syndrome. *Indian J Psychol Med* 36: 1-3.
5. Marcenich L (2010) Trauma informed care.
6. Janssen I, Krabbendam L, Bak M, Hanssen M, Vollebergh W, et al. (2004) Childhood abuse as a risk factor for psychotic experiences. *Acta Psychiatr Scand* 1: 38-45.
7. Velthorst E, Nelson B, O'Connor K, Mossaheb N, de Haan L, et al. (2013) History of trauma and the association with baseline symptoms in an Ultra-High Risk for psychosis cohort. *Psychiatry Res* 210: 75-81.
8. Daniel Skehan, Warren Larkin John Read (2005) Childhood adversity and psychosis: A literature review with clinical and societal implications. *Psychoanalysis, Culture & Society* 17: 373-391.
9. Docherty NM, St-Hilaire A, Aakre JM, Seghers JP (2009) Life Events and High-Trait Reactivity Together Predict Psychotic Symptom Increases in Schizophrenia. *Schizophr Bull* 35: 638-645.
10. Lardinois M, Lataster T, Mengelers R, Van Os J, Myin-Germeyns I (2011) Childhood trauma and increased stress sensitivity in psychosis. *Acta Psychiatr Scand* 123: 28-35.
11. Lataster T, Collip D, Lardinois M, van Os J, Myin-Germeyns I (2010) Evidence for a familial correlation between increased reactivity to stress and positive psychotic symptoms. *Acta Psychiatr Scand* 122: 395-404.
12. Read J, Perry BD, Moskowitz A, Connolly J (2001) The contribution of early traumatic events to schizophrenia in some patients: A traumagenic neurodevelopmental model. *Psychiatry* 64: 319-345.
13. Bebbington P, Jonas S, Kuipers E, King M, Cooper C, et al. (2011) Childhood sexual abuse and psychosis: data from a cross-sectional national psychiatric survey in England. *Br J Psychiatry* 199: 29-27.
14. Shevlin M, Houston JE, Dorahy MJ, Adamson G (2007) Cumulative traumas and psychosis: An analysis of the national comorbidity survey and the british psychiatric morbidity survey. *Schizophr Bull* 164: 166-169.
15. Varese F, Udachina A, Oorschot M, Bentall RP (2011) The relationship between dissociation and auditory verbal hallucinations in the flow of daily life of patients with psychosis. *Psychosis* 3: 14-28.

16. Haatainen KM, Tanskanen A, Kylmä J, Honkalampi K, Koivumaa-Honkanen H, et al. (2003). Gender Differences in the Association of Adult Hopelessness with Adverse Childhood Experiences. *Soc Psychiatry Psychiatr Epidemiol* 38: 12-17.
17. Maric N, Krabbendam L, Vollebergh W, de Graaf R, van Os J (2003) Sex differences in symptoms of psychosis in a non-selected, general population sample. *Schizophr Res* 63: 89-95.
18. Ochoa S, Usall J, Cobo J, Labad X, Kulkarni J (2012) Gender differences in schizophrenia and first-episode psychosis: A comprehensive literature review. *Schizophr Res Treatment* 2012: 916198.
19. Akbar N (2003) Akbar papers in African psychology. Mind Productions, FL, Tallahassee.
20. Kambon KK (2012) African/Black Psychology in the American Context. Nubian Nation Pubs, Tallahassee.
21. Anda RF, Brown DW (2010) Adverse childhood experiences and population health in Washington: The face of a chronic public health disaster. Washington State Family Policy Council, Olympia.
22. Loewy RL, Pearson R, Vinogradov S, Cannon TD (2011) Psychosis risk screening with the Prodromal Questionnaire--brief version. *Schizophr Res* 129: 42-46.
23. Ising HK, Veling W, Loewy RL, Rietveld MW, Rietdijk J, et al. (2012) The validity of the 16-item version of the Prodromal Questionnaire (PQ-16) to screen for ultra-high risk of developing psychosis in the general help-seeking population. *Schizophr Bull* 38: 1288-1296.
24. Kambon KK, Rackley R (2005) The Cultural Misorientation Scale: An Africentric measure of European cultural mis-identification among Africans in America. *J Afr Stud Res* 1: 15-34.
25. Kambon KK (2003) Cultural misorientation: The greatest threat to the survival of the black race in the 21st century. Nubian Nation Publications, FL, Tallahassee.
26. Fisher H, Morgan C, Dazzan P, Craig TK, Morgan K, et al. (2009) Gender differences in the association between childhood abuse and psychosis. *Br J Psychiatry* 194: 319-325.
27. Whitfield CL, Dube SR, Felitti VJ, Anda RF (2005) Adverse childhood experiences and subsequent hallucinations. *Child Abuse Negl* 27: 797-810.
28. Johns LC, Cannon M, Singleton N, Murray RM, Farrell M, et al. (2004) Prevalence and correlates of self-reported psychotic symptoms in the British population. *Br J Psychiatry* 185: 298-305.
29. Benjet C (2010) Childhood adversities of populations living in low-income countries: prevalence, characteristics, and mental health consequences. *Curr Opin Psychiatry* 23: 356-362.
30. Green J, McLaughlin K, Berglund P, Gruber M, Sampson N, et al. (2010) Childhood adversities and adult psychiatric disorders in the National IComorbidity Survey Replication I: Associations with first onset of DSM-IV disorders. *Arch Gen Psychiatry* 67: 113-123.
31. Read J, van Os J, Morrison AP, Ross CA (2005) Childhood trauma, psychosis and schizophrenia: a literature review with theoretical and clinical implications. *Acta Psychiatr Scand* 112: 330-350.
32. Livingston J, Eaton S, Singleton D, Wells V, Farrell P (2010) Early childhood education and services for all children: A call to action for social science and human service professional. *African American Research Perspectives* 127-137.
33. Bhagwat R, Kelly S, Lambert MC (2012) Exploratory factor analysis of African Self-Consciousness Scale scores. *Assessment* 19: 65-76.
34. Williams DR, Mohammed SA (2013) Racism and health I: Pathways and scientific evidence. *Am Behav Sci* 57: 1-19.
35. de Vries J, Byrne M, Kehoe E (2015) Cognitive dissonance induction in everyday life: An fMRI study. *Soc Neurosci* 10: 268-281.
36. Wallace BC, Constantine MG (2005) Africentric cultural values, psychological help-seeking attitudes, and self-concealment in African American college students. *J Black Psychol* 31: 369-385.
37. Department of Health & Human Services (2011) Justification of estimates of appropriations committees.
38. National Center for Health Statistics (2016) Health, United States, 2015: With special feature on racial and ethnic health disparities.
39. Adebimpe VR, Cohen E (1989) Schizophrenia and affective disorder in Black and White patients: A methodological note. *J Natl Med Assoc* 81: 761-765.
40. Masuda A, Anderson PL, Twohig MP, Feinstein AB, Chou Y, et al. (2009) Help-seeking experiences and attitudes among African American, Asian American, and European American college students. *Int J Adv Couns* 31: 168-180.
41. Thompson V, Bazile A, Akbar M (2004) African Americans' perceptions of psychotherapy and psychotherapists. *Profess Psychol: Res Prac* 35: 19-26.
42. Podoshen JS, Andrzejewski SA, Hunt JM (2014) Materialism, conspicuous consumption, and American hip-hop subculture. *J Int Consum Mark* 26: 271-283.
43. Miller TJ, McGlashan TH, Rosen JL, Cadenhead K, Cannon T, et al. (2003) Prodromal assessment with the structured interview for prodromal syndromes and the scale of prodromal symptoms: predictive validity, interrater reliability, and training to reliability. *Schizophr Bull* 29: 703-715.